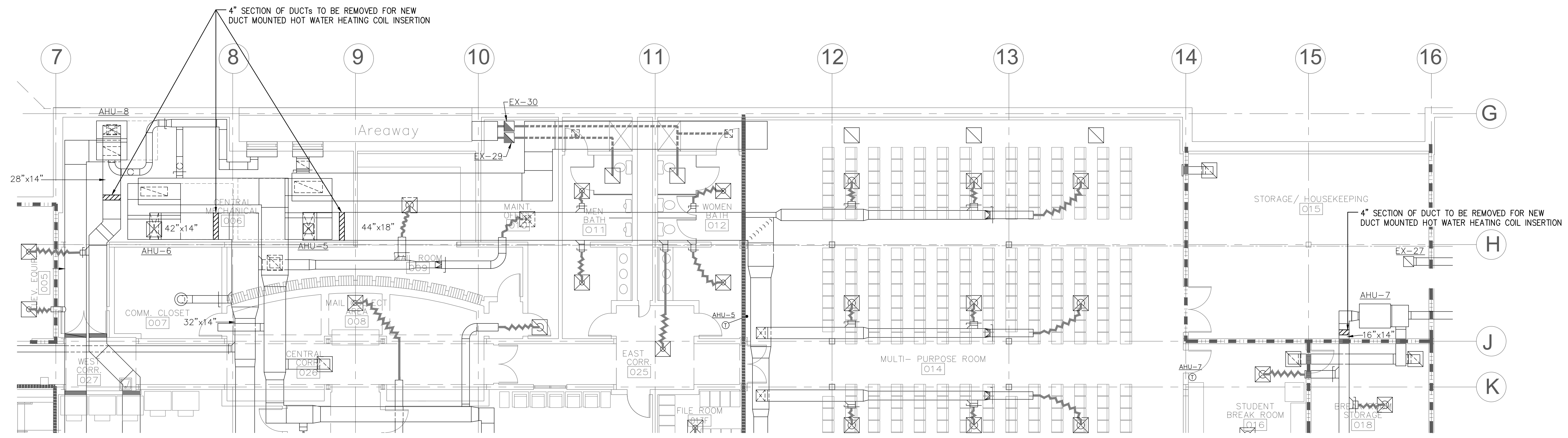


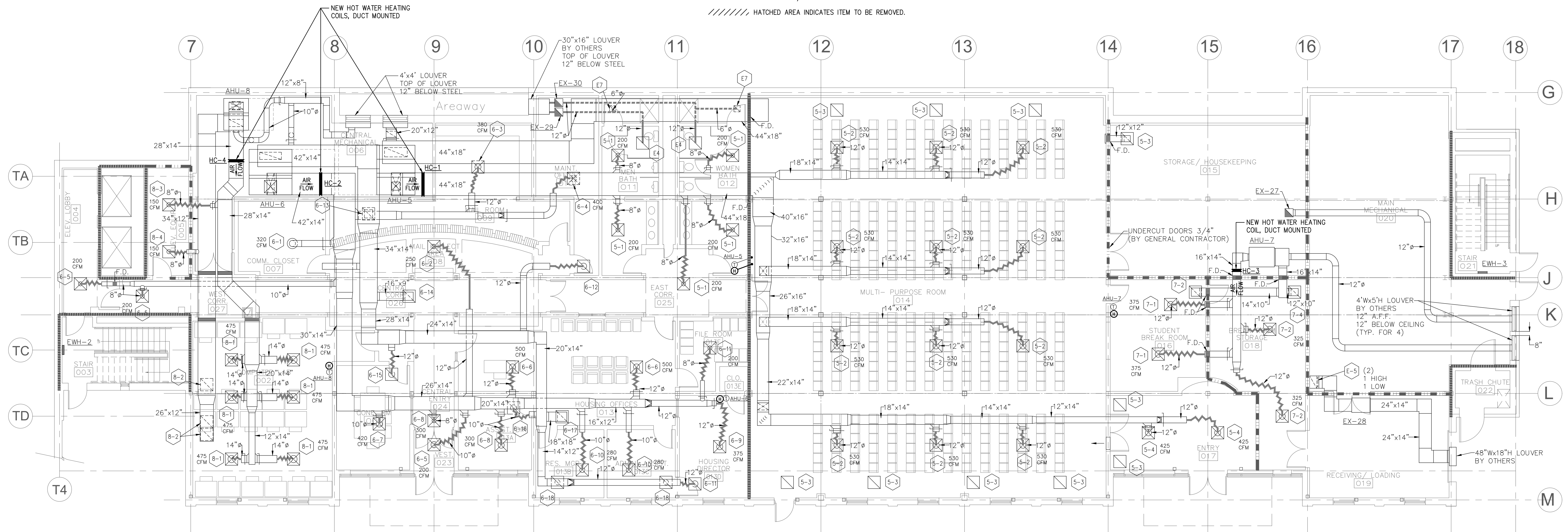
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PARTIAL BASEMENT HVAC DUCTWORK DEMOLITION FLOOR PLAN

SCALE: 1/8" = 1'-0"

////// HATCHED AREA INDICATES ITEM TO BE REMOVED.



BASEMENT HVAC DUCTWORK FLOOR PLAN - NEW WORK NOTED AND IN BOLD

SCALE: 1/8" = 1'-0"

HEATING COIL SCHEDULE															
TAG	SERVICE	COILMASTER MODEL No.	FINNED LENGTH x FINNED HEIGHT	SUPPLY AIRFLOW (CFM)	TOTAL M.B.H.	ENT. DB °F	L.V.G. DB °F	F.V.	S.P. INCHES	G.P.M.	ΔP FT.	PIPE RUNOUT SIZES (N.)	COIL CONN. SIZES (N.)	ROWS	REMARKS
HC-1	AHU-5	F58-108-22.5x57-05B	57"x22.5"	8,000	149.12	55	72.2	898.2 FPM	0.20	12	3.97	1 1/4"	1"	1	NOTES 1-5
HC-2	AHU-6	F58-106-18x44-04A	44"x18"	5,200	88.94	55	70.8	945.5 FPM	0.20	8	4.48	1 1/4"	3/4"	1	NOTES 1-5
HC-3	AHU-7	F58-106-15x16-02A	16"x15"	1,400	27.79	55	73.3	840 FPM	0.17	5	1.38	1"	3/4"	1	NOTES 1-5
HC-4	AHU-8	F58-108-16.5x30-02A	30"x16.5"	3,000	51.61	55	70.9	872.7 FPM	0.19	4	1.09	1"	3/4"	1	NOTES 1-5

- NOTES:
1. COIL SECTIONS BASED UPON 180°F ENT. WATER TEMPERATURE.
  2. 3/4" COPPER TUBES, 0.020" WALL THICKNESS.
  3. 18 GA. GALVANIZED STEEL CASING.
  4. TYPE "L" COPPER COIL HEADERS.
  5. 0.006" THICK ALUMINUM FINN.

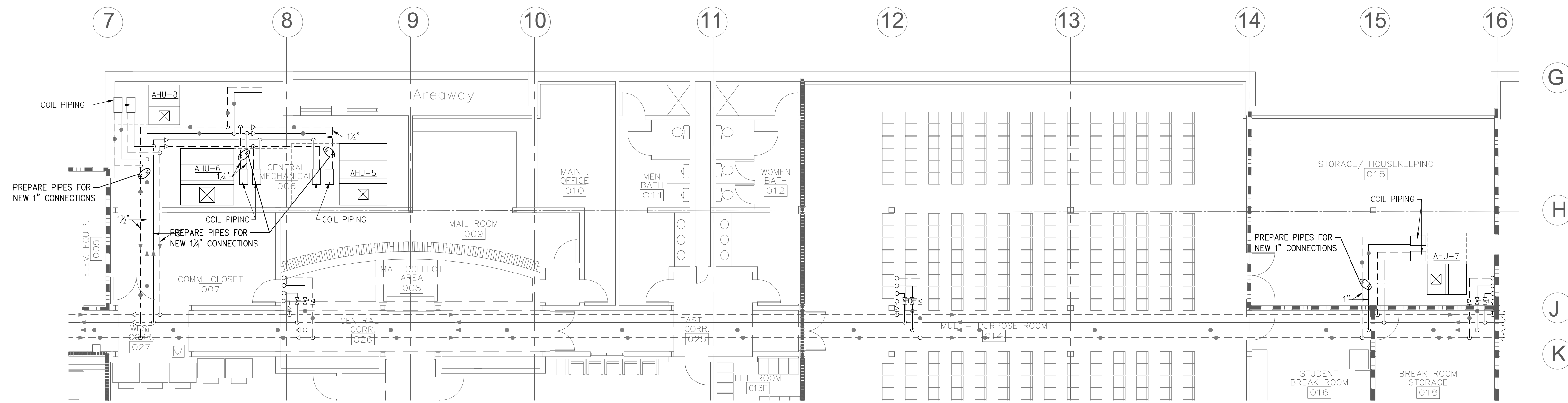
MECHANICAL LEGEND	
SYMBOL	DESCRIPTION
(H)	HUMIDITY SENSOR
A.D.	ACCESS DOOR
F.D.	FIRE DAMPER
(S)	EXISTING SUPPLY DIFFUSER
(R)	EXISTING RETURN AIR GRILLE
(F)	EXHAUST FAN
(D)	EXISTING DUCT
(F.D.)	FIRE DAMPER - F.D.
(FLEX)	EXISTING FLEXIBLE DUCT

MECHANICAL GENERAL NOTES

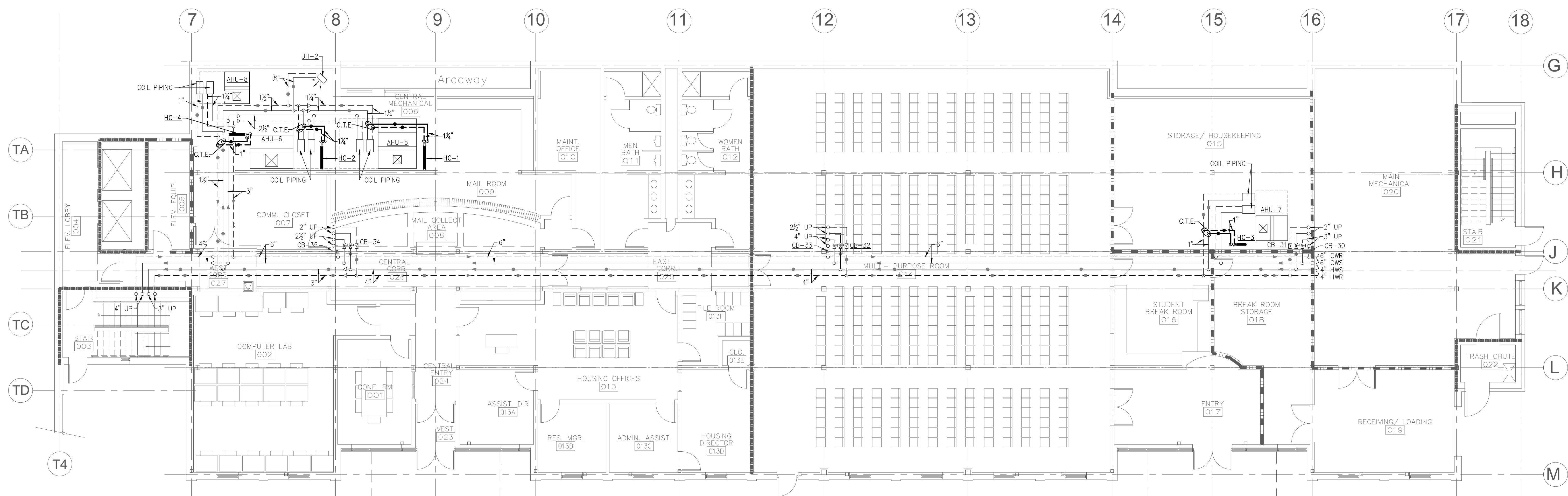
1. ALL SCHEDULES SHOWN ARE THE PURPOSE OF AIDING THE CONTRACTOR. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL CORRECT TOTALS.
2. ALL NEW PIPING ARRANGEMENT AND ROUTING AS SHOWN IS DIAGRAMMATIC AND MAY REQUIRE ALTERATIONS DIFFERENT FROM THAT SHOWN IN ORDER TO ACCOMMODATE STRUCTURE/ARCHITECTURAL FEATURES. CONTRACTOR SHALL FIELD VERIFY AND MAKE ALTERATIONS OR REVISIONS AS REQUIRED.

 <p>UNIVERSITY OF SOUTH CAROLINA UPSTATE HUMIDITY CONTROL UPGRADES AT PALMETTO HOUSE PROJECT #FP0000121/FM00570190 C#1998 SPARTANBURG, SOUTH CAROLINA</p>	<p>REVISIONS</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>NO.</th> <th>DATE</th> <th>BY</th> <th>DESCRIPTION</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>5-30-18</td> <td>JCP</td> <td>ISSUE FOR BID</td> </tr> </tbody> </table>	NO.	DATE	BY	DESCRIPTION	1	5-30-18	JCP	ISSUE FOR BID
NO.	DATE	BY	DESCRIPTION						
1	5-30-18	JCP	ISSUE FOR BID						
<p>DESIGN / DRAWN JCP / TMI</p> <p>DATE 5/30/2018</p> <p>PROJECT Peritus #180301</p> <p>SHEET <b>M-1</b></p> <p>1 OF 2 SHEETS</p>									

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**BASEMENT HVAC PIPING DEMOLITION FLOOR PLAN**  
SCALE: 1/8" = 1'-0"



**BASEMENT HVAC PIPING FLOOR PLAN**  
SCALE: 1/8" = 1'-0"

**MECHANICAL SPECIFICATIONS**

**SECTION 15000 - MECHANICAL GENERAL PROVISIONS**

**COORDINATION OF MECHANICAL WORK:**  
GENERAL: It is recognized that the contract documents are diagrammatic in showing certain physical relationships which must be established within the mechanical work, and in its interface with other work including utilities and electrical work, and that such establishment is the exclusive responsibility of the Contractor.

**QUALITY ASSURANCE, STANDARDS AND SYMBOLS:**  
General: The following standards are imposed, as applicable to the work in each instance:

- International Building Code (IBC), 2015 Edition
- NFPA Code
- International Energy Conservation Code (IECC), 2009 Edition
- International Mechanical Code (IMC) 2015 Edition
- National Electrical Code (NEC), NFPA 70 - 2014 Edition

**ELECTRICAL PROVISIONS OF MECHANICAL WORK:**

**WIRING:** The contractor is responsible for all wiring. All power and control wiring to be complete to all equipment, and control devices. The Contractor shall determine the source of electrical energy for the various power and control circuits. All wiring shall be in conduit, shall conform with all local codes, the National Electrical Code, and shall be installed by an approved licensed Electrical Contractor.

**PIPING MATERIALS:**

Heating Water Piping: Copper tube ASTM B88 type (L) hard drawn temper with wrought-copper/bronze solder-joint fittings. Solder and flux to be lead free. "Pro-Press" fittings are also acceptable at contractors option. Ball Valves: shall be full port 150 psi working pressure as manufactured by Apollo or Flowset. Provide dielectric nipples where dissimilar piping materials are joined.

**SYSTEMS INSULATION**

**DUCTWORK:**  
Extent of insulation work is indicated as described herein. In general, the work to include insulating all new duct transitions up to and through duct mounted heating coils. In addition, work shall include replacement insulation that may be damaged during coil installation.

Duct insulation shall comply with paragraph 803.2.8 in the 2009 International Energy Conservation Code.

Ductwork shall be insulated with rigid 2" thick type Owens Corning FRK-25 series ED150 duct wrap. Seal insulation with fire retardant mastic.

**PIPING:**

In general, the work to include insulating all new heating water piping including any existing pipe insulation that may be damaged during new unit installation. Pipe shall be insulated with 1/2 inch Armaflex 22 formed plastic pipe insulation. All joints to be secured with Armaflex 520 adhesive. Pipe insulation shall comply with table 803.3.7 in the 2009 International Energy Conservation Code.

**DUCTWORK**

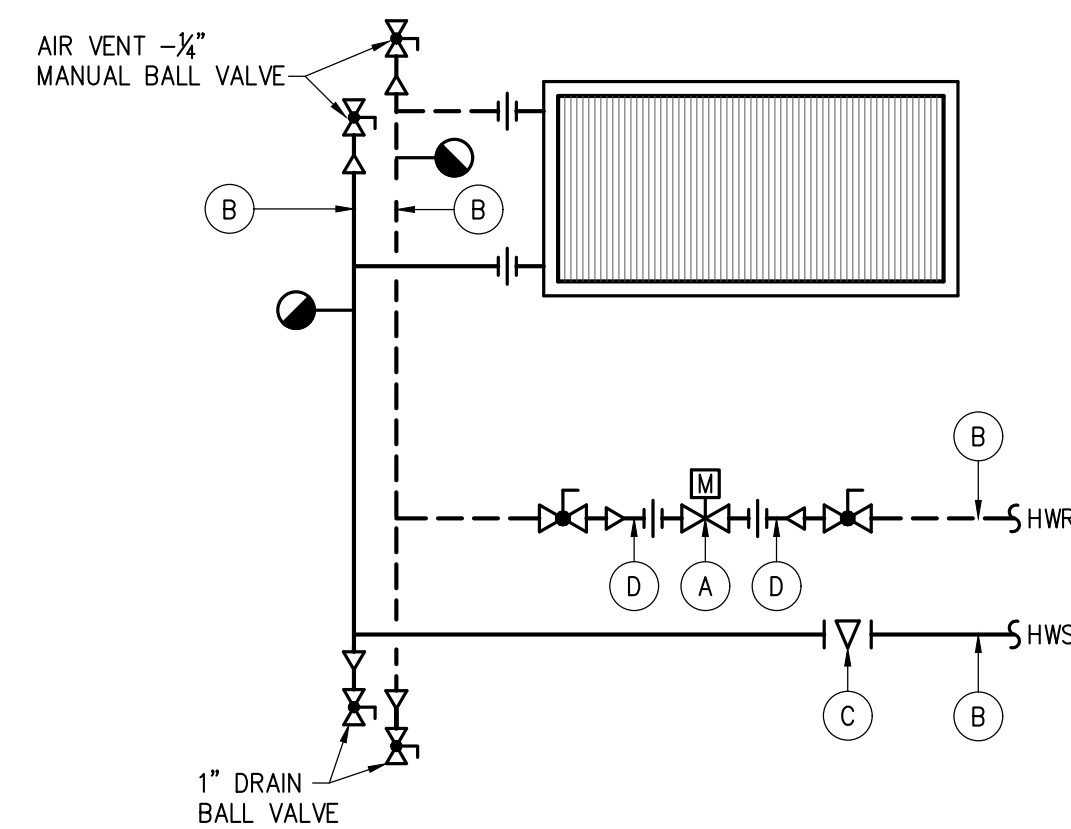
All Sheet Metal Work shall be installed in accordance with the requirements stipulated in the current issue of NFPA Pamphlet No. 90.

Sheet Metal Construction: Ductwork shall be constructed of galvanized steel. Gauges (U.S. Standards) of metal which shall be used, together with the type of joints and methods of stiffening and bracing for various size ducts shall be as follows:

Fabrication shall be in accordance with the latest edition of SMACNA HVAC Duct Construction Standards for the class and static pressures required. Ductwork provided upstream of VAV boxes shall feature +10" w.c. pressure class.

All ducts shall have all seams and joints sealed airtight with United Sheet Metal Sealer to be applied as per Mfg. Bulletin DS-3. No duct tape will be allowed.

Duct Hangers and Supports: Shall be either strap hangers or trapeze hangers properly secured to the building construction. Strap hangers, metal attached to ducts, shall be fastened to supporting member by clamps, anchor bolts, or metal screws whichever is most applicable.



**SINGLE BANK HEATING COIL SCHEMATIC**  
NO SCALE

NOTE: BALL VALVES SHOWN ARE FOR PIPING 2 1/2" & SMALLER USE BUTTERFLY VALVES ON PIPING 3" AND GREATER.

**COIL PIPING SCHEDULE**

UNIT No.	COIL TYPE	A	B	C	D
HC-1	HW HTG COIL	CV-1	1 1/2"	CB-1	1"
HC-2	HW HTG COIL	CV-2	1 1/2"	CB-2	3/4"
HC-3	HW HTG COIL	CV-3	1"	CB-3	1/2"
HC-4	HW HTG COIL	CV-4	1"	CB-4	1/2"

**CONTROL VALVE SCHEDULE**

SYMBOL	SERVICE	JCI MODEL No.	SIZE	CV	G.P.M.	dp FEET	TYPE	NO. REQ'D.
CV-1	HC-1	VG1245CL	1"	7.4	12	6.1	2-WAY	1
CV-2	HC-2	VG1245BG	3/4"	4.7	8	6.7	2-WAY	1
CV-3	HC-3	VG1245AF	1/2"	2.9	5	6.9	2-WAY	1
CV-4	HC-4	VG1245AE	1/2"	1.9	4	10.2	2-WAY	1

NOTES:  
1. STAINLESS STEEL BALL AND STEM

**COIL PIPING PACKAGES W/ AUTOFLOW DEVICE**

SYMBOL	GRISWOLD MODEL	SIZE	G.P.M.	CONTROL VALVE	NO. REQ'D.	SERVICE	AUTOFLOW VALVE MODEL
CPP-1	B.CPP2IRIR2P	1 1/2"	12	CV-1	1	HC-1	IR-22
CPP-2	B.CPP2IRIR2P	1 1/2"	8	CV-2	1	HC-2	IR-22
CPP-3	A.CPP2IRIRIG	1"	5	CV-3	1	HC-3	IR-12
CPP-4	B.CPP2IRIRIG	1"	4	CV-4	1	HC-4	IR-12

NOTES:  
1. SEE VALVE SCHEDULE.

**MECHANICAL LEGEND**

SYMBOL	DESCRIPTION
—	EXISTING HEATING WATER SUPPLY PIPING - HWS
---	EXISTING HEATING WATER RETURN PIPING - HWR
---	EXISTING CHILLED WATER SUPPLY PIPING - CWS
---	EXISTING CHILLED WATER RETURN PIPING - CWR
---	HEATING WATER SUPPLY PIPING
---	HEATING WATER RETURN PIPING
○	BALL VALVE
▽	CIRCUIT BALANCER
□	2-WAY CONTROL VALVE
△	REDUCER
— —	UNION
⊙	PRESSURE GAUGE
⊙	THERMOMETER

**MECHANICAL GENERAL NOTES**

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**SPARTANBURG, SOUTH CAROLINA**

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 CHECKED: JCP  
 DATE: 5/30/2018  
 Peritus #180301  
**M-2**  
 2 OF 2 SHEETS

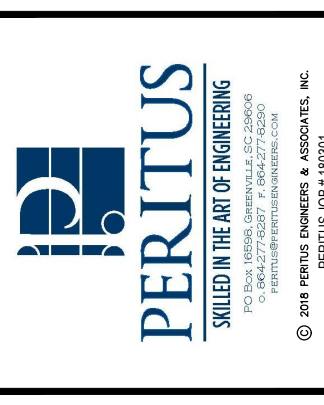
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